In the Specification

Please amend the paragraph found on page 6, lines 10-18 of the specification as follows:

In Figure 1, (A) is a diagrammatic representation of a HIV-1 donor DNA substrate of ~2650 bps (SEQ ID NOs:24-27). The solid box represents an expression cassette for the EGFP (enhanced green fluorescent protein). (B) is a diagrammatic representation of an in vitro integration reaction with an acceptor DNA (pPPOsite and as a control pBluescript II), integration donor DNA (substrate from pB2LTR+EGFP) and purified HIV-1 IN (cIN), IN-I-*Ppo*I or IN-H98A proteins. Possible products include those that result from concerted integration of both donor DNA termini (left) and from non-concerted integration by two or more (middle) or one (right) donor DNA molecules via one-ended integration events.

Please amend the paragraph found on page 31, lines 18-26 of the specification as follows:

In Figure 5, (pcnppo_h98a-cons – SEQ ID NO:28; M38131 – SEQ ID NO:29; pcnppo6_H98A – SEQ ID NO:30) represent identical sequence, gaps in the consensus ("star"-) row indicate differences in sequence. The base difference in the first gap (1) has no effect on amino acid encoded by the affected codon. Differences in (2) are also silent apart from the His98 mutation presented as GCN in the sequence obtained from pCNPpo6h98a's provider (codon showed in bolded, wt encodes for His and mutated codon for Ala). Case (3) indicates a sequence difference of the parental plasmid compared to wt sequence of I-PpoI, but the actual sequence of the plasmid pCNPpo6h98a was found to be identical to the wt sequence. The plasmid pCNPpo6 only differed from the wt sequence in the expected His98 encoding triplet.

Please amend the paragraph found on page 34, lines 17-19 of the specification as follows:

In ~~Fig. 5~~ Figure 6, the upper sequence presents the 5' LTR (SEQ ID NOs:31 and 33) and the lower corresponds to the 3' LTR (SEQ ID NOs:32 and 34). The restriction site of *ScaI* is underlined and the CA-dinucleotides in each 3' end are bolded.

Please amend the paragraphs found on page 46, line 3, through page 47, last line, of the specification as follows:

Table I-1 Primers used in insert-PCR (4.1.1.1). The sequences are presented in the 5' → 3' direction. RE-sites introduced in the primers are presented as underlined sequences and explained in the table. Start- and stop codons are bolded.

Primer name	Sequence	RE-site	Template& PCR product
F992	CCTTAATTAA**ATG**TTTTTAGATGGA ATAGAT (SEQ ID NO:1)	PacI	PLJS10, IN
3'IN	GCTCTAGAATCCTCATCC**T**GTCTACT (SEQ ID NO:2)	XbaI	--‘’--, IN, cIN
3'cIN	TATGGCCTCTCAGGCCA**TTATTA**AT CCTCATCCTGTCTACT (SEQ ID NO:3)	SfiI	--‘’--, cIN
G7	ATTCACCACTAGTGCTCCAAAAAAA AAGCGC (SEQ ID NO:4)	SpeI	pCNPpo6: I-PpoI pCNPpo6h98a: H98A
F987	TATGGCCTCTCAGGCCA**TTATTA**TA CCACAAAGTGACTGCC (SEQ ID NO:5)	SfiI	----‘’-----

Table I-2 Primers used in GATEWAY-PCR (4.1.7.1). The sequences are presented in the 5' → 3' direction. Two stop codons in GW 3'Ppo- and GW 3'cIN primers, as well as a start codon in the GW 5'IN HT, are marked in bolded. The six histidine encoding codons in GW 5'IN HT are underlined.

Primer name	SEQ ID NO.	Sequence
G238	SEQ ID NO:6	GGGGACCACTTTGTACAAGAAAGCTGGGTTATGGCC
(GW 3'Ppo)	SEQ ID NO:7	TCTCAGGCCA**TTATTA**TACCACAAAGTGACTGCC
G402	SEQ ID NO:8	GGGGACCACTTTGTACAAGAAAGCTGGGTA**TTATTA**
(GW 3' cIN)	SEQ ID NO:9	ATCCTCATCCTGTCTACT
G445	SEQ ID NO:10	GGGACAAGTTTGTACAAAAAAGCAGGCT**ATG**
(GW 5'IN HT)		CATCACCATCACCATCACCTGGTGCCGCGCGGCAGC
	SEQ ID NO:11	TTTTTAGATGGAATAGAT

Table I-3: Primers used in sequencing. The sequences are presented in the 5' → 3' direction.

Primer name	SEQ ID NO.	Sequence
G448	SEQ ID NO:12	GGGGAAAGAATAGTAGAC
G449	SEQ ID NO:13	GCCACACAATCATCACCTGCC
T3	SEQ ID NO:14	ATT AAC CCT CAC TAA AGG G
T7	SEQ ID NO:15	AAT ACG ACT CAC TAT AGG G
G502	SEQ ID NO:16	CAATCAAAGGAGATATACCACG
G550	SEQ ID NO:17	TCGACCTGCAGGCGCGCCGA

Table 1-4: Oligodeoxyribonucleotides used in creation of the LTRs for pB2LTR and in construction of the I-PpoI site inserted in pPPOsite.

Oligo name	SEQ ID NO.	Sequence	Description
G515	SEQ ID NO:18	CTCTCTTAAGGTAGC	I-PpoI upper
G517	SEQ ID NO:19	GCTACCTTAAGAGAG	I-PpoI lower
G569	SEQ ID NO:20	CTAGTAGTACTGCTAGAGATTTTCCACAGCATG	3' LTR lower
G570	SEQ ID NO:21	CTGTGGAAAATCTCTAGCAGTACTA	3'LTR upper
G604	SEQ ID NO:22	CAGTGAATTAGCCCTTCCAGTACTGGTAC	5'LTR lower
G605	SEQ ID NO:23	CAGTACTGGAAGGGCTAATTCACTGCATG	5'LTR upper
G448	SEQ ID NO:12	GGGGAAAGAATAGTAGAC	5'newSeq4IP
G449	SEQ ID NO:13	GCCACACAATCATCACCTGCC	3'NewSeq4IP

Please insert the accompanying Sequence Listing as new pages 1-9 following page 53 (Abstract of the Disclosure) in the subject specification.